

Clinical Section

First Aid and Transportation of Fractures*

By

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The increasing interest manifested in First Aid care of fractures indicates the growing realization of the great harm or good which may be done by the first person to undertake the care of the patient. Most fractures are the result of automobile or industrial accidents which means that they occur at all times and throughout all parts of the country. Therefore, fractures represent the one large group of patients for whose care the general practitioner must always be prepared to accept responsibility.

Many university centres and large hospitals have a fracture service or fracture clinic in which a group of men limit themselves to this type of specialty. These groups, which carry out excellent, complicated treatment and discover new methods, represent the advance guard from whom progress in the treatment of fractures is to be expected. As such these are good but not good enough.

The majority of fractures will continue to be treated by the general practitioner and it still remains the duty of a teaching centre to train those who are going out into general practice so that they will be able to treat fractures safely and well. It is the duty of every general practitioner to refresh his memory at intervals as to the best methods of treatment; and it is the duty of organized medicine in the interest of the injured, to instruct a sufficient group of laymen in the principles of First Aid since most victims of accidents are ministered to by a layman before the doctor arrives.

A successful move in this direction has been made in Ontario by establishing, under the aegis of St. John's Ambulance Corps and the Canadian Red Cross, First Aid posts marked by road signs at service stations or restaurants along all main highways. Each of these is under the direction of a trained, First Aid man.

"Splint 'Em Where They Lie"

One of the most important First Aid principles is contained in the slogan of the American First Aid Groups, "Splint 'em where they lie." By the time a First Aid man or a doctor reaches the injured person, the accident is over, the fracture has been produced, and no further harm is likely to result as long as the patient remains untouched.

If, however, any thoughtless bystander picks up the broken leg or picks up the patient, attempting to carry him without first protecting the fracture by splints, he may easily mush the ends, produce further trauma, strip periosteum, tear blood vessels, tear nerves or muscles or even transform a simple fracture into a compound one.

This, of course, is regrettable, and, in all cases, unnecessary since, by the application of a primitive splint, it is possible to protect the limb before undertaking transportation. This splint may be simple, and ingenuity will suggest the uses to which any available material may be put. A board off the fence, an umbrella, ski, or ski pole should be pressed into service if necessary and in the absence of anything else one should always remember that excellent splinting of a broken leg will be effected if the bad leg, including the foot, is bound firmly to its mate. No attempt at reduction is made but the part is immobilized so that further damage cannot occur.

Prevention of Shock

Another equally important First Aid principle in the care of an accident victim is the prevention of shock. All fractures, in fact all injuries, produce a certain amount of shock. This condition may be combatted first by avoiding any further rough handling; second by keeping the patient warm. A coat or blanket is usually available for covering the patient and hot water bottles, if any are at hand, may be placed beside him taking care not to burn the skin. The administration of fluids and stimulants is a further step in the treatment of shock. Strong tea or coffee supplies the patient not only with warmth but with fluids, caffeine and glucose, if sugar be added. Alcohol is not recommended since it dilates peripheral blood vessels and thereby contributes further to shock.

Sedative

Since First Aid includes also the comfort of the patient one must consider the administration of sedative. There is absolutely nothing to gain by permitting a patient to suffer. In fact the use of sedative not only protects the victim from unnecessary discomfort but is, at the same time, good treatment for shock. Sedative should be sufficient to produce relief of pain and there is no better method for its administration than by hypodermic. However, the use of any sedative should be followed by one further step. The amount of sedative and the time of its administration should be written on a slip of paper and sent with the patient, or even pinned on his coat if necessary. Otherwise the admitting officer at the hospital to which he is being sent will have no way of knowing what previous medication has been used. The handling of casualties in the army indicates the necessity of labelling patients.

* An address delivered to the Manitoba Medical Association, September 21st, 1940.

Transportation

The next procedure in the treatment of fractures is to arrange for transportation. All fractures must be moved from the place where they occur to the place where they are to be treated. After the above mentioned preliminary First Aid care has been carried out provision should be made for getting the patient to the correct place of treatment in the minimum of time. However, it cannot be too strongly stated that the irresistible inclination of the enthusiastic passing Samaritan, to bundle the shocked and suffering victim into the back seat of his car and drive at breakneck speed to the next town has nothing to recommend it except the good will of the would-be benefactor. Transportation should be arranged intelligently and only after the safety and comfort of the patient have been taken care of.

A few specific types of fractures will be discussed here along with their proper First Aid care.

Spine

Fractured spines, if not handled with the utmost care, may result in complications proving in many cases fatal to the victim. The original fracture of a vertebral body may not be accompanied by cord damage in which case the end result should be excellent and the patient should have no disability whatever. Nevertheless, to lift a patient by the shoulders and legs is to invite trouble. The crushed vertebral body is shifted in position resulting in a shearing of the spinal cord with complete destruction at that level and the "no permanent disability" prognosis is drastically changed to either slow death from ascending kidney infection or the hopelessness of a paralytic nightmare.

A patient with a spine injury should be rolled gently over on his face and should be kept in this position until he reaches proper hands. The slight sag of an impromptu stretcher made of a coat or a blanket between two poles is harmless providing that at no time the hyperextension of the spinal column exceeds that of the normal stance.

Lower Extremity

Most patients with fractures of the lower extremity must be carried but there are one or two types of fracture which may be allowed to hobble on crutches.

Pott's Fracture.

A patient who has sustained a Pott's fracture, for instance, may hop on his good foot with a little help or may use crutches. Usually, in this type of fracture, there is so much swelling of the surrounding tissues that the fragments are held immobile without the aid of splints. Still, as a general rule, it is safer and better practice to apply a splint. Occasionally one finds a tendency to easy displacement due to lack of swelling so that in these cases a splint is absolutely essential.

Tibia and Fibula.

Where there is a fracture of both the tibia and fibula a simple pillow splint, made by laying the leg lengthwise on a pillow and firmly bandaging the two sides of the pillow around the leg, is the most comfortable way of transporting the patient from the scene of accident to a doctor's office or hospital. Since in this type of fracture the subcutaneous position of the tibia renders it liable to be pushed through the skin, thereby compounding the fracture, a break of both bones in the leg demands special care and splinting.

Fractures Near the Knee.

This same pillow splint may be used to advantage where there is a fracture just above or just below the knee. The yielding softness of the pillow allows for swelling of the limb so that the patient may travel without expert supervision and yet without fear of ischaemia.

Shaft of Femur.

Any fracture of the shaft of femur must be carefully handled and splinted before the patient is allowed to travel. Deformity is often present to an alarming degree in cases of fractured femur shaft. Muscle pull is strong and pain is severe while the over-riding of fragments is almost always present. Alignment should be at least partially corrected by a straight-away pull on the leg. Any long improvised splint may be used such as a piece of board, or umbrella, taking care, of course, to pad it well. One very simple method of splinting such a fragment is to bind the injured leg firmly to the good leg.

Neck of Femur.

Fractures of neck of femur should be specially mentioned because they are very common in old people and, if impaction has occurred they will often travel quite comfortably, but should be splinted in order to avoid breaking down the impaction if it should be present. The same type of splint as used for the shaft will be found serviceable for transporting fractures through the neck of femur.

Upper Extremity

Most fractures of the upper extremity may be allowed to walk after the injured limb has been firmly splinted.

Colles' Fracture.

Patients suffering from a Colles' fracture can be counted on to guard their own injury, usually supporting it with their good hand. Where travelling is rough or tedious an anterior splint may be applied with no attempt at reduction of the deformity and a sling added for further comfort.

Radius and Ulna.

Where both radius and ulna are fractured, narrow splints may be applied on both back and front of forearm to prevent the fracture from becoming complicated by damage to muscles and nerves. Application of a sling lessens the tendency to move the wrist and elbow, and will render it more comfortable.

Fractures Near Elbow.

Where the bones near the elbow have been fractured, the First Aid man runs into an alarming number of serious complications. Such fractures are usually the result of great force and more often than not are found to be comminuted, often shattering into the elbow joint itself. Since the radial artery lies directly in the danger area any slight displacement of fragments is likely to shut off pulsation at the wrist. Note of the presence or absence of this complication should be made immediately upon examination of the patient both for the attendant's protection and for guidance in further treatment of the fracture. Fractures in the region of the elbow joint should be pulled into approximate alignment and may be splinted on either an L-shaped splint or between two long well-padded boards with the arm held straight out.

Shaft of Humerus.

Splint allows very free movement, which is dangerous, and fractures here are sometimes complicated by the wobbling ends of bone which damage the radial nerve or radial artery. A good way of fixing this fracture before allowing patient to walk is simply to tie his wrist to his neck using a narrow flannel bandage and allowing the downward pull provided by the weight of the arm itself to maintain the fragments in alignment. If the patient is to travel by car or train where he is to be sitting or lying down, comfortable fixation may be obtained by binding the injured arm close to the side with the forearm across the chest.

Neck of Humerus.

Fractures of neck of humerus are more common than the shaft. They are well treated in a manner identical with that described for the shaft.

Clavicle.

One of the commonest of all fractures is a broken clavicle. These are usually painful and annoying but not serious. Patients may be allowed to walk or ride sitting up but will obtain great comfort if a tight sling is applied so that it lifts the elbow well up. The arm may also be bandaged to the chest with a pad in the axilla although this is not necessary as a First Aid measure.

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*The American Journal of Digestive Diseases, Feb. 1940, Vol. VII, No. 2, 60-63.
 **The Journal of the American Medical Association, Feb. 3, 1940, Vol. 114, No. 5, 404-408.

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 sanctioned by the Manitoba Medical Association*

\$178,000.00; they have received and spent in gift funds for Health Education the sum of \$55,000.00; \$50,000.00 in gift funds has been spent on Food and Nutrition; and \$56,000.00 in gift funds has been spent in the Cancer Department. The approximate total of these expenditures is \$549,000.00. During this same period of sixteen years the fees received from doctors throughout Canada amounted to \$450,000.00. The contributions received, therefore, to carry on this work amount to about \$1.10 for every dollar contributed by doctors in fees.

Health Officers

Dr. Geo. Clingan moved that a motion adopted by the Northwestern District Medical Society and by a meeting of part-time Medical Health Officers of the Province, be adopted by the Manitoba Medical Association, and this was carried. The resolution is as follows:

"WHEREAS at the present time there seems to be lack of uniformity in the services of Health Officers for Municipalities, and

"WHEREAS in some Municipalities more could be done to prevent disease among the residents,

"THEREFORE BE IT RESOLVED that we recommend to the Executive Committee of the Manitoba Medical Association that the Department of Health and Public Welfare be requested, with the assistance of the Manitoba Medical Association, to suggest a standard of services suitable for adoption by Municipalities without a full time personnel, that residents of Municipalities, rural and urban, might have supplied to them; and it might insure more complete and continuing service if payment for such services were on a yearly salary basis, taking into consideration the size of the Municipality and number of persons to be served."

News of the Annual Meeting of the Manitoba Medical Association

The Treasurer, Dr. S. G. Herbert, reported that the assets of the Association consisted of bonds valued at \$4,518.00 and cash on hand \$3,760.00, as of September 1st, 1940. He also stated that after providing for contemplated current expenses there would be a balance of over two thousand dollars, and he recommended that two thousand dollars be invested in bonds for safe keeping.

Maternal Mortality

The report of the Committee on Maternal Mortality was commented on by Dr. T. C. Routley. He said such a report reflected great credit on the Manitoba Division of the Canadian Medical Association, as it presented the lowest maternal mortality in the Dominion.

Membership

A Committee was appointed to increase membership in the Manitoba and Canadian Medical Associations by informing non-members of the value of the work done by these bodies. Dr. Routley stated that during the past sixteen years the Canadian Medical Association had received and spent in gift funds for Post-Graduate work the sum of \$210,000.00; they have received and spent in gift funds for the Hospital Service Association

Practices of Doctors in the Army

Dr. C. W. Burns moved the following resolution, which was carried:

"THAT the Manitoba Medical Association is anxious to assist in the prompt re-establishment of members of the profession, who have left their practices to serve with the Army Medical Corps, and

"THAT if and when the medical men now serving with the Military Forces return to resume their practices, that they be invited to submit to the Association a complete list of their former regular patients. The Association in turn will undertake to notify these patients individually by mail that their former medical advisor has returned to resume his

regular duties, that he is a member of the Association and is regarded as an efficient practitioner or specialist as the case may be, and that the members of the Association at large hope that when medical attention is required that the doctor in question be called and given the opportunity to serve again his former patients.”

OBITUARY

DR. ALEXANDER NEIL MacLEOD

Dr. Alexander Neil MacLeod died at his home in Winnipeg on October 11th at the age of 73. Born in Kildonan of pioneer stock, his father having been a factor of the Hudson's Bay Company, he was educated in Winnipeg and graduated in Arts from Manitoba College and in Medicine from Manitoba Medical College. He practised for thirty years in Stonewall and for fifteen years in Winnipeg. For several years he was secretary of the Faculty of Medicine, University of Manitoba, and assistant provincial coroner.

His son, Alan MacLeod, won the Victoria Cross in the last war at the age of nineteen, but died of influenza shortly after the armistice.

Dr. MacLeod is survived by his widow, who is an authority on the early history of the Canadian West, and by two daughters.

War Time Registration in Great Britain

The General Medical Council of Great Britain announces that temporary registration under the Defence Regulations 1939 will be granted free of charge to British Subjects or United States citizens, of good character, who hold medical diplomas granted by any Province of Canada or any State or territory of the United States of America. Applicants must also be registered in a Province or State before applying for a British registration.

The object of this ruling is to facilitate the enlistment and the work of army medical officers by cutting registration red tape. Until this order was enacted on September 14th, 1940, a medical officer from Ontario, for example (which had no reciprocity with Great Britain) had great difficulty in registering in England, and could not officially look after English soldiers or civilians.

Maggot Substitute

Amer. Jour. Surg., 1940, Jan., p. 111

Ammonium Bicarbonate is found in maggots. A 2% solution of this substance placed in suppurating wounds has been found to have a cleansing effect similar to that of live maggots.

Gifts to the Library of the Faculty of Medicine:
University of Manitoba
from
Manitoba Physicians 1939-40

The Library Committee of the Medical Library gratefully acknowledges the following donations of books, journals, and pamphlets during the last Session.

	Pamp.	Period	Vols.	Other
Dr. A. C. Abbott	1	0	0	0
Dr. G. V. Bedford	2	0	0	0
Dr. F. T. Cadham	0	5	0	0
Prof. A. T. Cameron	8	0	0	0
Dr. W. G. Campbell	9	0	7	0
Children's Hospital	0	25	0	0
Dr. Bruce Chown	4	0	0	0
Dr. Gordon Chown	0	65	0	0
Dr. W. E. R. Coad	0	1	0	0
Dr. T. H. Cuddy	0	300	0	0
Dr. M. Ellen Douglass	1	0	0	Mss.
Dr. N. Galambos	0	0	1	0
Dr. A. Gibson	3	0	0	0
Dr. C. R. Gilmour	0	0	5	0
Dr. J. A. Gunn	0	91	0	0
Dr. J. A. Hillsman	0	6	0	0
Dr. F. W. Jackson	2	0	0	0
Dr. Eyjolfur Johnson	0	194	18	0
Dr. M. R. MacCharles	2	0	0	0
Dr. D. F. McIntyre	72	781	9	0
Dr. F. D. McKenty	0	306	0	0
Dr. James McKenty	375	0	0	0
Mrs. (Dr.) A. N. McLeod	0	2	0	0
Dr. J. C. McMillan	0	38	0	0
Manitoba Medical Association	0	60	0	0
Manitoba Medical Student's Association	0	4	0	0
Manitoba Sanatorium	1	0	0	0
Manitoba (Prov.) Dept. Health and Public Welfare	1	0	0	0
Manitoba University Arts Library	13	0	0	0
Dr. A. T. Mathers	0	30	2	0
Dr. Sara Meltzer	0	1	0	0
Dr. Rosslyn B. Mitchell	7	121	9	0
Dr. E. W. Montgomery	0	11	0	0
Dr. H. D. Morse	10	4	0	0
Dr. H. M. Murdoff	0	1500	0	0
Dr. W. W. Musgrove	0	10	0	0
Dr. Daniel Nicholson	39	6	0	0
Dr. R. W. Richardson	0	6	0	0
Dr. William Rogers	0	0	193	0
Dr. George Ryan	0	2	0	0
Dr. H. M. Speechly	0	61	1	0
Dr. George Stephens	0	0	5	0
Dr. P. H. T. Thorlakson	2	0	0	0
Winnipeg Public Library	0	0	13	0
Winnipeg (City) Health Dept.	12	0	0	0
Winnipeg (City) School Board	1	0	0	0
Dr. F. A. Young	0	86	29	0
Total Material Received	565	3516	292	1 Mss.

Among the above donations are included copies of "The Canadian Medical Association Journal" for the current year, which are used for exchange purposes. For these journals the Library receives: "The New York State Journal of Medicine," "St. Thomas' Hospital, Reports," "St. Thomas' Hospital Gazette," "The Southern Medical Journal," "The South African Journal of Medical Sciences," and the "Australian Journal of Experimental Biology and Medical Sciences." The library is very pleased to receive recent copies of "The Canadian Medical Association Journal" which can be used in this way.

Personal Notes and Social News

Conducted by Gerda Fremming, M.D.

Dr. and Mrs. C. B. Stewart are to be congratulated on the birth of a son on October 4th.

✿ ✿

Dr. and Mrs. Bernard Mooney enjoyed a trip to Eastern Canada and the United States, and Dr. Mooney attended the American X-ray Convention in Boston.

✿ ✿

Dr. and Mrs. A. G. Henderson are taking a post-graduate course in Tropical Medicine, at Tulane University, New Orleans, in preparation for missionary work.

✿ ✿

Dr. Stephen S. Toni was recently married to Sophie Helen Gacek at St. John's Cantius Church.

✿ ✿

Dr. Julius Anderson, of Biggar, Sask., was married on October 12th to Margaret L. Bower.

✿ ✿

Dr. D. R. Allen, a graduate of Toronto, 1940, has started practise at Beresford Lake.

✿ ✿

Dr. Horace Lamontagne, a graduate of McGill, 1937, has commenced practise with Dr. Claude McRae, of Winnipeg.

✿ ✿

Dr. E. I. Ostry, L.R.C.P., M.R.C.S., 1940, is practising in Whitemouth.

✿ ✿

Dr. A. W. Lawler has moved from Grand Beach to Winnipeg.

✿ ✿

Dr. H. H. Bruser has moved to Rapid City from Elphinstone.

✿ ✿

Dr. John Brodie has left Winnipeg for California.

✿ ✿

Dr. Peter Berbrayer, M.D., Man., 1934, F.R.C.S. (Eng.), 1940, has returned to Winnipeg after five years' post-graduate work in London, England.

✿ ✿

Dr. J. E. Musgrove has left for Rochester, where he has a fellowship in Surgery at the Mayo Clinic.

✿ ✿

Dr. William Locke and Dr. J. L. Silversides, of Winnipeg, are among the first Canadian medical men to be sent overseas as members of the Canadian Navy Service.

✿ ✿

Dr. H. M. Malcolmson has returned from England after three years' post-graduate work, and intends joining the Canadian Medical Corps.

✿ ✿

Dr. and Mrs. Gerard Allison are rejoicing in the birth of their first child, a son, on October 24th.

✿ ✿

The engagement of Dr. Douglas Bracken to Miss Rosemary McWilliams is announced.



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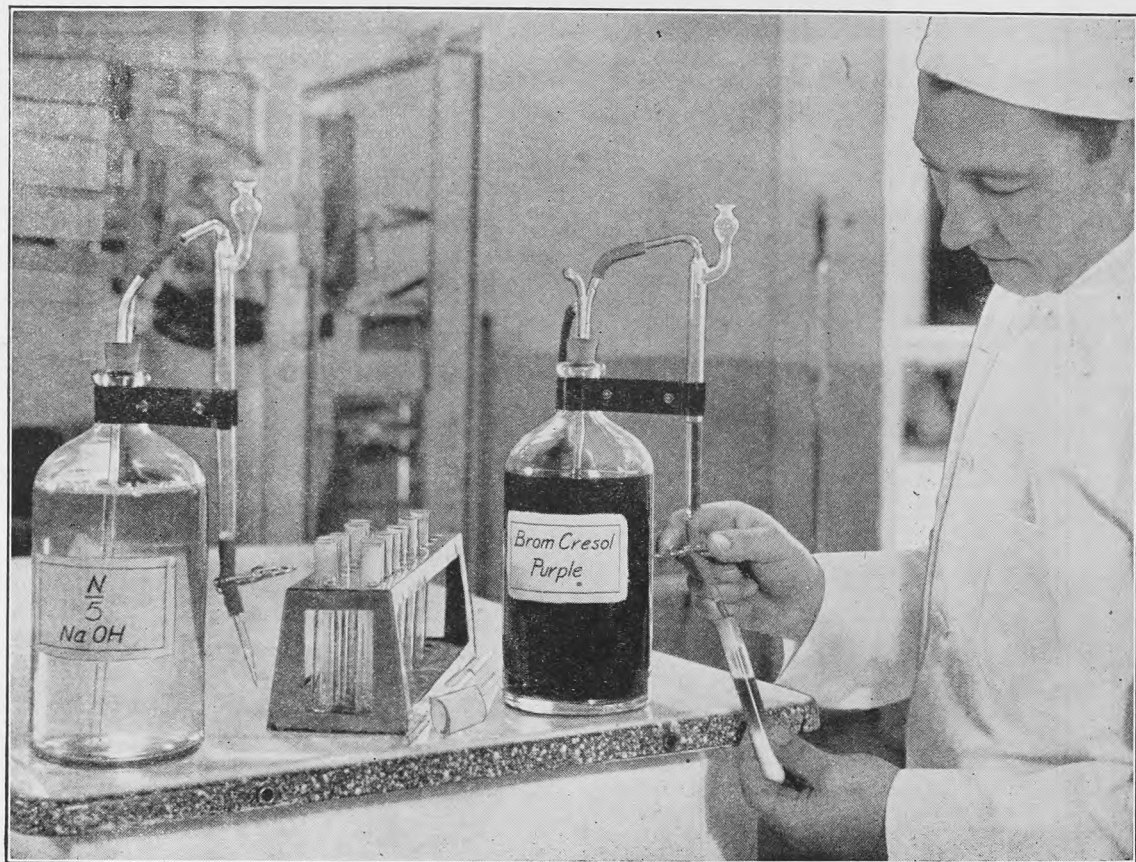
Kolmer's Guide to the Therapeutic Value of the Sulfanilamide Compounds

from "Archives of Internal Medicine", April 1940, p. 704

(It is suggested that this list be kept on hand for reference)

<i>Diseases</i>	<i>Compounds</i>	<i>Results</i>
Local infection of hemolytic streptococcus	Neoprontosil and sulfanilamide	Very good
Hemolytic streptococcic septicemia	Neoprontosil and sulfanilamide	Very good
Streptococcic pneumonia and empyema	Neoprontosil and sulfanilamide	Very good
Streptococcic meningitis	Neoprontosil and sulfanilamide	Good
Erysipelas	Neoprontosil and sulfanilamide	Very good
Scarlet fever	Neoprontosil and sulfanilamide	To prevent complications
Streptococcic peritonitis	Neoprontosil and sulfanilamide	Good
Streptococcus viridans endocarditis	Sulfapyridine	Worthy of use
Ulcerative colitis	Neoprontosil	Good
Meningococcic meningitis	Sulfanilamide	Very good
Meningococcic septicemia	Sulfanilamide	Worthy of use
Pneumococcic pneumonia	Sulfapyridine	Very good
Pneumococcic meningitis	Sulfapyridine	Good
Pneumococcic peritonitis	Sulfapyridine	Good
Gonococcic urethritis	Sulfanilamide and sulfapyridine	Good
Gonococcic ophthalmia	Sulfanilamide and sulfapyridine	Good
Gonococcic arthritis	Sulfanilamide and sulfapyridine	Good
Infections of the urinary tract	Neoprontosil and sulfanilamide	Good
Staphylococcic septicemia	Sulfapyridine and neoprontosil	Encouraging
Undulant fever	Sulfapyridine and neoprontosil	Good
Chancroid	Sulfanilamide	Good
Typhoid fever	Sulfanilamide	Worthy of trial
Clostridium welchii infections	Sulfanilamide, sulfapyridine and neoprontosil	Very good
Tuberculosis	Sulfanilamide	Ineffective
Bacillus pyocyaneus infections	Sulfanilamide	Worthy of use
Pertussis	Sulfanilamide	To prevent complications
Influenzal meningitis	Sulfapyridine and sulfanilamide	Worthy of use
Bacillus friedlander pneumonia	Sulfapyridine	Worthy of use
Rheumatic fever	Sulfanilamide	Doubtful
Tularemia	Sulfanilamide	Worthy of use
Glandular fever	Sulfapyridine	Worthy of use
Lupus erythematosus	Sulfanilamide	Ineffective
Pemphigus	Sulfapyridine	Encouraging
Dermatitis herpetiformis	Sulfapyridine	Worthy of use
Actinomycosis	Sulfanilamide	Worthy of use
Lymphogranuloma venereum	Sulfanilamide	Very good
Measles and pertussis	Sulfanilamide	To prevent complications
Trachoma	Sulfanilamide	Very good
Rabies	Sulfanilamide	Ineffective
Smallpox	Sulfanilamide	Doubtful
Poliomyelitis	Sulfanilamide	Ineffective
Trichinosis	Sulfanilamide	Ineffective

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Ammonium
Carbonate - - - 8 grs.
Ammonium
Chloride - - - 16 grs.
Prunus Serotina - - 6 grs.
Senega - - - 8 grs.
Menthol - - - ¼ gr.
Chloroform - - - 2 min.
Glycyrrhiza - - - q.s.
Honey - - - - q.s.

Dose: One to two fluid
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Department of Health and Public Welfare

LEAD POISONING

The following is an article, quoted in part, from the "Industrial Medicine" Publication, September, 1940 issue, and was written by Dr. Nell Conway.

"Like the poor, lead poisoning is always with us. Obviously this has been true since man first discovered the manifold uses of this metal, and indeed the connection between the use of lead and the symptoms it produces was known even to the ancients. Today the ordinary lead hazards are well known, particularly those encountered in industry, but a careful perusal of the literature reveals unrecognized hazards in unexpected places and under unusual forms. Early in the nineteenth century unusual sources of lead poisoning were listed by Tanquerel des Planches; lead hazards to children were tabulated at the turn of the century; during the same era cases of unusual etiology in adults were collected, and more recent lists have also been compiled. Most of the practices mentioned in the older articles have been corrected but some still persist and new, often bizarre, causes of lead poisoning have appeared.

Lead in Beverages

Lead in alcoholic beverages has probably caused poisoning from time immemorial. Hofmann searched the classics for records of poisoning from this source. He found various recipes for preparing the must—called "sapa" and "defrutum"—which was boiled down and added to other wines to improve their flavor and perhaps to preserve them, and in every instance a leaden kettle was recommended for this purpose. Although the Greeks and Romans knew the toxicity of lead they evidently did not realize the hazard of using leaden vessels for cooking and wine-making and when illness resulted from drinking wine it was attributed to other causes such as marble, pitch, salt, etc.

The names "Devonshire colic" and "Poitou colic" are but two of many synonyms for lead colic that have come down to us from former days, reminiscent of a time when epidemics due to the consumption of lead-containing wine, beer, etc., were of more or less common occurrence. Tanquerel des Planches has written an illuminating account: "Writers in the eighteenth century mention a great many cases of lead colic, epidemic in its forms, produced by the use of wines adulterated with litharge, or white lead, for the purpose of rendering sweet and agreeable, those that were sharp and harsh. This fraud was then generally practised and occasioned so many diseases, in Germany, Italy, and France, that the governments of those countries were obliged to publish several ordinances, in which they declared that the greatest severity would be used against persons who permitted such deceptions. Zeller relates, that a publican was condemned to death, because he had caused an epidemic lead colic in a village in Germany, by sweetening his wines with litharge. This unfortunate person was himself attacked with this disease." Stiefler, who has also written a very interesting review of the literature on this subject, mentions an ordinance issued by Kaiser Friedrich in 1487 as one of the earliest of which we possess a record.

In a survey of present-day conditions in country districts of Upper Austria, Stiefler found that poisoning is still caused rather frequently by the use of lead pipes, etc., in wine-making and by other careless practices such as the repairing of cooking utensils with lead. This report has been confirmed by both Duy and Nedok. Willcox observed lead poisoning in country districts of England where home-made wine is fermented in a "red glazed pan," glazed with a lead compound readily soluble in fruit acids; and

Jackson reported in 1932 on "a local outbreak of Devonshire colic" from cider drawn from the casks through lead pipes. Ten years earlier a similar epidemic in the county of Middlesex was traced to beer kept in newly installed lead-glazed tanks. Lead poisoning from this source seems to have appeared in the United States coincidentally with the eighteenth amendment. Several case-reports of poisoning from this source seems to have appeared in the literature and doubtless many others failed to be recorded. Moore describes several cases caused by almost incredible carelessness, as for instance the use of a barrel originally containing litharge, and in another case a red-lead keg, for the making of wine.

Very recently a report appeared in a Canadian journal of six severe cases of lead poisoning in alcoholic addicts who made a practice of drinking "canned heat." The poisoning was caused, not by the original fractions of the mixture, but by contamination of the contents by lead going into solution from the containers.

Lead in Food

Poisoning from lead in food is of rare occurrence. The possibility that it might result from the use of lead in insecticides has occasioned much concern but only two cases have appeared in the literature in which the poisoning was attributed to this source. Serious epidemics occurred repeatedly in the past from contamination of flour caused by mending broken millstones with lead; although this practice has been discontinued in general, three such epidemics have been reported recently in Austria, Italy and Spain. An epidemic in Brest in 1925 was traced to a bakery where the wood used for heating the oven was obtained by breaking up old boats and was heavily covered with paint. No further accounts of mass poisonings from such a source have appeared but an occasional case has come to light; for example, that of a workman who was in the habit of baking potatoes for his lunch in a minimum-dehydrating oven. One of the rare examples of what would seem to be the deliberate use of lead as an adulterant of food was reported in Bulgaria in 1926, where red lead in red pepper caused many cases of poisoning.

Cooking utensils with a high lead content, a constant source of poisoning in former years, still cause trouble occasionally, earthenware vessels finished with a lead-containing glaze being the chief offenders. In Germany during the World War, when copper kettles were confiscated, wide-spread poisoning was caused by plum jam cooked in enameled vessels. Reports come from the Orient of poisoning from the use of copper or brass cooking utensils lined with a heavily alloyed tin and from the use of a low-grade pewter, particularly for wine-pots. Poisoning has been caused by lead in a grill and also in a spoon, and again by a spoon in which lead has been melted.

Lead in Tobacco

That lead in snuff could cause poisoning was discovered more than a century and a half ago but in spite of this fact cases, sometimes ending fatally, continue to be reported. The source of the contamination has been found to be lead compounds, particularly lead chromate, used to improve the color, and lead in the foil wrappers. The question has been raised recently however whether lead arsenate sprayed on the tobacco plants might not be a contributory factor. A search of the literature has revealed only one case in which poisoning was attributed to lead in smoking tobacco, and experiments have shown that even if lead were present, a very small proportion would be carried over into the smoke and inhaled, since most of it would remain in the ash and tar as Pb and PbO. Cassil

and Smith, of the Division of Insecticide Investigations, U.S. Department of Agriculture, found from 3.5 to 85 p.p.m. of lead in samples of chewing tobacco and from 12 to 131 p.p.m. in snuff the probable source being lead arsenate used to dust the tobacco plants. Zeidler and Wagner found an average content of 22 p.p.m. lead in Canadian cigarettes as compared with an average of less than 2.5 p.p.m. in those made from pure oriental tobaccos. The question of lead in tobacco has been reviewed in a recent number of the "Journal" of the American Medical Association.

Lead Poisoning in Infancy

Poisoning in infants was reported frequently by the older writers, from the application of lead-containing ointments to the child's skin or to the mother's breast, and also from the use of lead nipple-shields. Poisoning resulting from these practices has almost disappeared; however nipple-shields still cause an occasional case, and two reports of poisoning from ointment applied to the mother's breast have been made fairly recently. Lead in toys and in paint used on toys and household articles was also responsible, formerly, for many cases of poisoning in small children, and in spite of a vigorous campaign waged against this practice, poisoning from these sources still occurs.

A high incidence of lead poisoning among the children in certain parts of Australia has been attributed to the ingestion of dried lead paint from verandahs of houses exposed to hot sunshine. Widespread poisoning of nurslings in Japan and other countries in the Orient was found to be caused by powders containing large quantities of white lead which the mothers used on their faces, necks and breasts and on the infants themselves.

Rare Causes of Lead Poisoning

Occupations which seemingly are safe sometimes carry a hazard because of an unsuspected exposure to lead. For instance, lead encephalopathy developed in a stagehand who had been working for nine years in Viennese theatres, handling sets, transporting them, hanging them, rolling them, etc., and it was found that the paints most used in making stage drops, particularly the yellow colors, consisted of lead chromate and contained 67% lead. When, subsequently, 253 stagehands were examined, 32 were found to have a lead line and some revealed weakness of the extensors, but no other clinical cases of poisoning were discovered. Again, dust from lead-lined tea boxes caused poisoning in a man who for 26 years had emptied them, collected the lead and packed it. In another case the patient had collected, sorted and packed bullets reclaimed from rifle butts, and in yet another "had been employed for 17 years as scorekeeper in a poorly ventilated rifle shooting gallery"; the lead bullets, striking against the iron plate behind the target, where he stood, raised considerable lead dust.

Lead poisoning was the diagnosis, also, in a day-laborer who had always worked in the country and at the time was employed at digging sand in the garden. Inquiry disclosed that a shooting butt for testing fire-arms had formerly been in the garden, that it had been used for many years, and that the sand was full of fragments of lead from the bullets. Sand from Mechernick, a place in the Eifel district well known for its lead smelting works, was used to remove rust from iron girders. Three cases of poisoning occurred in men using the sand, the symptoms appearing within 14 days, and analysis showed in a sample of unused sand 3.2% of lead, in used sand 0.95%.

Lead poisoning has been reported twice in golf professionals. Davis writes: "The occupation of golf professionals does not seem, at first glance, to carry with it a risk of lead poisoning. It has, however, a dangerous side-line in the practice, which is common among professionals and their helpers, of repainting used golf balls for re-sale as practice balls. The method

employed involves unusual exposure since the painter uses no brush but merely takes a handful of white lead paint and works it into the uneven surface of the ball by rotating the latter between the palms."

Another surprising case connected with the patient's profession was discovered in the criminal identification bureau of the police department in Copenhagen. For many years, when examining articles for finger prints an employee had dusted them with large amounts of finely pulverized white lead and had then brushed the lead away and bent over them to detect possible prints.

Lipkovitch pointed out a potential source of occupational lead poisoning. In a new model of a standard make of typewriter a felt cushion with which the keys made contact had been replaced by a fabric bag filled with lead. The dust beneath the typewriter contained 57% lead by weight, and air at the level of the typist's mouth contained from 0.15 to 0.19 mg. lead per cubic meter. Lead dust was detected also on the typists' hands at the end of the day's work. The incidence of symptoms which might be attributable to lead poisoning was higher in this group than in control groups, but no clinical cases of poisoning were found.

An occupation may have no inherent lead hazard but poisoning may result from careless practices. Thus two cases have been reported in artists who were in the habit of moistening their brushes in their mouths, and another in a workman who held nails in his mouth. Berkesy tells of a railway-car packer who always kept in the same pockets the lead slugs he used in nailing up the loaded cars, the knife with which he ate bread and bacon, and even portions of his lunch. Almost incredible carelessness was responsible for poisoning in the case of a barber who for years used a lead rod to smooth his razor-strop and had formed the habit of licking the dust off the rod.

Lead seems formerly to have been a frequent component of cosmetic preparations but only sporadic cases of poisoning from this source are reported now. Recently illness in an English actress was traced to a theatrical grease paint with a high lead content; two cases occurred in this country, one from lead in hair dye, the other from an "enamel face cream," two cases from hair dye were reported in Italy, and a similar case in France. In the Orient lead-containing face powders seem still to be used extensively and have caused poisoning in adults as well as the meningitis in infants mentioned above.

Lead seems also to have played quite a role as a pharmaceutical agent in earlier days. Thompson has written an interesting review of Goulard's "Treatise on Effects and Various Preparations of Lead—Particularly of Extract of Saturn—for Different Chirurgical Disorders," published in 1766, which extols the virtues of lead, especially for external application. According to Tanquerel des Planches, it was used internally as well and he cites various instances in which it caused colic. Bush, writing in Cincinnati in 1831, reported a "case of pulmonary disease threatening phthisis, relieved by the supervention of colica pictorum, in consequence of drinking cider impregnated with lead." This was unpremeditated therapy but other articles of the same period indicate that lead treatment of tuberculosis had a fairly extensive vogue. Reports of poisoning from lead used as a medicine are very rare now, of course, but a strong solution of lead acetate used for ivy poisoning has had such an effect, and very recently a case of encephalopathy caused by lead and opium pills has been reported.

The use of lead as an abortifacient seems to date from antiquity and in this capacity it must always have caused poisoning. That it is still so used and that it continues to cause poisoning is attested by an occasional case-report.

Whether or not lead poisoning may result from absorption of lead from bullets or fragments of missiles retained in the body has long been a moot question.

Shortly before the World War, Lewin called the attention of the medical world to this possibility, and interest in the question was revived, naturally, following the war. As a result many such cases have been reported. A careful review made recently by Machle reveals, however, that when the reported cases are subjected to critical examination the diagnosis of lead poisoning from retained missiles can rarely be confirmed.

Although in the Middle Ages lead sometimes served as a means of poisoning one's enemies, such a use is rarely made of it now. White lead was the agent employed in a case occurring in Germany, and lead arsenic was used in two cases reported in Australia.

In 1933, widespread lead poisoning occurring in indigent families in Baltimore was traced to the use of discarded battery casings for fuel; fumes from this wood, pouring out into the poorly ventilated houses, contained sufficient lead to cause serious and even fatal illness. Similar cases were observed later in Nashville and Chicago, two cases have been reported very recently in Kentucky, and it is feared that this source of poisoning has not yet been eliminated in our large cities.

Lead poisoning of unusual etiology occurs in animals as well as in man. The ingestion of shot by wild fowl has become a serious problem. The birds feed in "duck holes" at the bottom of lakes and dig down into the mud and silt which, in long-used shooting grounds, contains shot in considerable quantities. According to Henning, cows too have swallowed lead bullets and been poisoned while grazing in the vicinity of a rifle range. The same author described poisoning in horses which had been exercised on a course covered with sand containing appreciable quantities of lead oxide.

Among the bizarre causes of lead poisoning which have come to light, two reports from the Orient may be mentioned. Yang, Chang and Liu write: "It is common when a person is ill in China for him to go to or call in a taoist priest, who writes a charm on a paper, burns it, and gives the ash to the patient to be swallowed. Sometimes, as in two cases recorded here, the writing is in red pigment which, on analysis, was found to be pure lead oxide. And again, a unique case is reported from India; a convict used a lead disc in an attempt to form an esophageal invagination in which to hide his treasures but by mistake swallowed the disc, which lodged in his stomach and poisoned him."

COMMUNICABLE DISEASE REPORT

August 13th to September 9th

Whooping Cough: Total 119—Winnipeg 28, Arthur 6, Dauphin Town 6, Rosser 5, Unorganized 5, Albert 3, Montcalm 3, St. Boniface 3, Flin Flon 2, Harrison 2, Saskatchewan 2, Brandon 1, Brenda 1, Hamiota Village 1, Kildonan West 1, Lansdowne 1, Melita 1, Pipestone 1, Roblin Rural 1, Tache 1 (Late Reported: Roblin Rural 19, Eriksdale 5, Oak Lake 4, Lansdowne 3, St. Vital 3, Minnedosa 2, Morris Town 2, Melita 1, Woodlands 1).

Chickenpox: Total 74—Winnipeg 29, Unorganized 22, Argyle 5, Flin Flon 3, Portage Rural 3, Arthur 2, St. Vital 2, Minnedosa 1, North Norfolk 1 (Late Reported: Gilbert Plains 2, St. Boniface 2, Unorganized 2).

Measles: Total 62—Winnipeg 6, Thompson 6, Dauphin Town 6, Brandon 4, Unorganized 4, Gilbert Plains Rural 2, Hanover 2, Kildonan East 1, North Norfolk 1, Portage Rural 1, Ste. Rose Rural 1, Tache 1, Transcona 1, Tuxedo 1 (Late Reported: Unorganized 19, Portage Rural 2, Arthur 1, Daly 1, Gilbert Plains Rural 1, North Norfolk 1).

Scarlet Fever: Total 31—Winnipeg 10, Gilbert Plains Rural 9, St. Clements 5, Dauphin Town 3, Dauphin Rural 2, St. Vital 1 (Late Reported: Dauphin Town 1).

Mumps: Total 20—Winnipeg 8, St. Boniface 5, Harrison 2, Coldwell 2, Daly 1, Hamiota Rural 1 (Late Reported: Brooklands 1).

Tuberculosis: Total 12—Winnipeg 11, Lawrence 1.

Diphtheria: Total 11—Winnipeg 9, St. Andrews 1, St. James 1.

Typhoid Fever: Total 5—Hanover 1, Portage Rural 1, St. Andrews 1 (Late Reported: Ste. Anne 1, Roblin Rural 1).

Influenza: Total 4—Hamiota Rural 3, Ste. Rose Rural 1.

Anterior Poliomyelitis: Total 3—Winnipeg 2, Whitehead 1.

Erysipelas: Total 3—Morris Rural 1, Winnipeg 1 (Late Reported: Edward 1).

Pneumonia Lobar: Total 2—Brandon 1, Ste. Rose Rural 1.

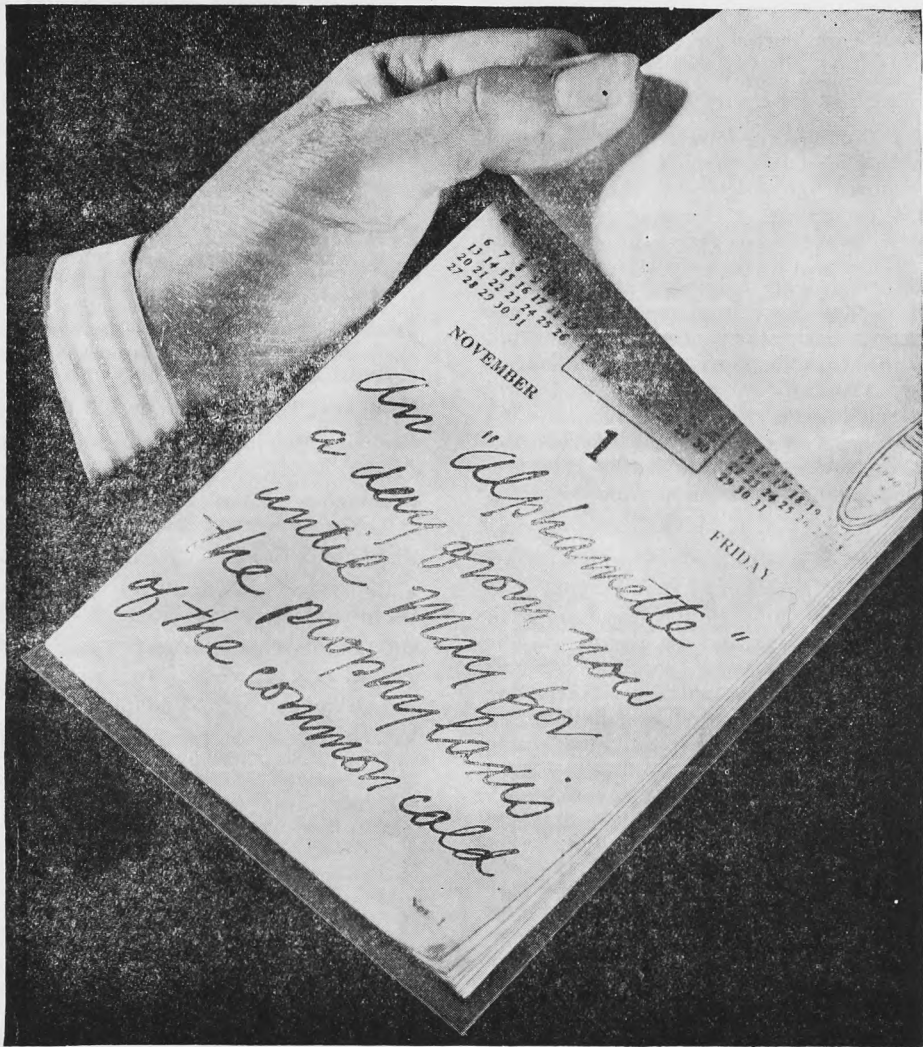
Diphtheria Carriers: Total 2—Winnipeg 2.

Ophthalmia Neonatorum: Total 1—St. James 1.

Treaty Indians: Total 19—Diphtheria 8, Tuberculosis 7, Chickenpox 2, Whooping Cough 2.

Venereal Disease: Total 160—Gonorrhoea 141, Syphilis 19.

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